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FROM: **Robert D Fish, Esq.**

RE:

OUR REF: 100848.213102US4	NUMBER OF PAGES, INCLUDING COVER: 12
09/624855	
SPECIFIC MODULATION OF TH1/TH2 CYTOKINE EXPRESSION	
RIBAPHARM - ROBERT TAM	

MESSAGE:

I just left you a voice mail. Attached are two relevant cases, confirming the use of intent language "so that" as a patentable distinction with respect to an inherency distinction. See especially In Re Oelrich on page 3, right hand column.

"Appellants here countered the PTO inherency contention at oral argument (no reply brief was filed) by urging that there is no "inherency" because there is no "inevitability," that is, the

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previously quoted "means plus function" limitation of claim 1 is not inherently (always) present in the device of the Oelrich patent.

It is true that mere recitation of a newly discovered function or property, inherently possessed by things in the prior art, does not distinguish a claim drawn to those things from the prior art. *In re Swinehart*, 58 CCPA 1027, 1031, 439 F.2d 210, 212-13, 169 USPQ 226, 229 (1971). In this case, however, claim 1 does not merely recite a newly discovered function of an old device. *In re Chandler*, 45 CCPA 911, 254 F.2d 396, 117 USPQ 361 (1958), a case not cited by either party to this appeal, is most pertinent to the instant controversy."

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LEXSEE

IN RE CHANDLER

No. 6341

United States Court of Customs and Patent Appeals

45 C.C.P.A. 911; 254 F.2d 396; 1958 CCPA LEXIS 188; 117 U.S.P.Q. (BNA) 361

Oral argument March 5, 1958

April 23, 1958

PRIOR HISTORY: [***1] APPEAL from Patent Office, Serial No. 23,936

certain claims were not drawn to patentable subject matter.

DISPOSITION: Modified.

CORE CONCEPTS:

CASE SUMMARY:

PROCEDURAL POSTURE: Appellant sought review of the rejection of his patent application containing 50 claims by the Board of Appeals of the United States Patent Office on the ground of multiplicity.

OVERVIEW: Appellant's patent application containing 50 claims was rejected by the Board of Appeals of the United States Patent Office (Board) on the ground of multiplicity. On appeal, the court noted that applications for inventions considerably more complicated than those of appellant had been accomplished with far fewer claims. The court found that the claims did not distinctly claim the subject matter which appellant regarded as his "invention," as required by 35 U.S.C. § 112. After balancing the possible damage appellant could incur in the future against the burden imposed on the patent office and courts by an unreasonably large number of claims, the court upheld rejection of the claims. However, the court reversed the Board's adverse holdings about some of appellant's claims because some were patentable in that they were not obvious under prior art and some would have been patentable under a valid generic claim.

OUTCOME: The decision was affirmed as to the rejection of all the claims on the ground of multiplicity and as to the failure to consider a number of claims on their merits but was reversed as to the holding that

Patent Law > Specification & Claims > Multiplicity

It is proper to allow applicants a reasonable latitude in setting forth their inventive concepts in different phraseology, but it is the purpose of claims to point out and define what an applicant regards as his invention, and that purpose is not served if, as the result of frequent repetitions, they present to the mind a blur rather than a definition.

Patent Law > Specification & Claims > Multiplicity

Whether a claim is broad or narrow is a matter of degree and opinion, and it does not follow that two claims are patentably, or even materially, different from each other merely because one may be termed "broad" and the other "narrow." Similarly, two claims do not necessarily differ materially because one merely recites only one item while the other recites several; and the fact that one of two claims is drawn to a method, and the other to an apparatus is not, in itself, proof that both are necessary to protect appellant's invention.

Patent Law > Specification & Claims > Multiplicity

The extent to which virtual duplication of claims may be justified by possible remote contingencies is a matter of opinion which must be determined on the basis of the circumstances of each individual case. It is necessary to balance the possible damage to an applicant which might result from an insufficient number of claims against the

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burden imposed upon the patent office and the courts by the presentation of an unreasonably large number.

Patent Law > Specification & Claims > Description Requirement

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof.

Patent Law > Specification & Claims > Multiplicity

If all the claims stand rejected on the ground of multiplicity, the application would then contain no allowed claim, generic or otherwise. If the multiplicity objection is overcome, and the case then contains an allowable generic claim, action on the merits of the claims would be in order.

Patent Law > Specification & Claims > Multiplicity

The question as to how many claims should be considered on their merits when there is an outstanding rejection of all the claims on the ground of multiplicity is one which should be left largely to the discretion of the patent office tribunals. There appears to be no statute or rule which requires any action whatever on the merits under such circumstances.

COUNSEL: *A. M. Prentiss* for appellant.

Clarence W. Moore (*S. Wm. Cochran* of counsel) for the Commissioner of Patents.

OPINION BY: O'CONNELL

OPINION: [**397] [**912] Before JOHNSON, Chief Judge, and O'CONNELL, WORLEY, RICH, and JACKSON (retired), Associate Judges

O'CONNELL, Judge, delivered the opinion of the court:

This is an appeal from the decision of the Board of Appeals of the United States Patent Office affirming the rejection by the Primary Examiner of all the claims of appellant's application No. 23,936 for a patent on an automatic control for jet engines. Claims 2 and 12, which are typical of the rejected claims, are as follows:

2. In an aircraft propelled by a jet engine, means for controlling the speed of flight in accordance with the reaction thrust of the engine jet, comprising: means for mounting the engine so that it is movable relative to said aircraft in proportion to the reaction thrust of its jet, throughout the range of said movement, and means responsive to said movement for regulating the propulsive power of said engine, in accordance with said movement, so that said [**913] aircraft [***2] is

propelled at a definite, selected speed, corresponding to the position of said engine relative to said aircraft, throughout the speed range of said aircraft.

12. In an aircraft propelled by multiple jet engines, means for controlling the speed of flight in accordance with the jet reaction thrust of each engine, comprising: means for mounting each engine so that it is movable relative to said aircraft in proportion to the reactive thrust of its jet, throughout the range of said movement; and means for regulating the propulsive power of all the engines by varying the fuel supply to each engine in accordance with the movement of one engine selected as a matter, so that said aircraft is propelled at a definite, selected speed, corresponding to the position of said engine relative to said aircraft, throughout the speed range of said aircraft.

The references relied on are:

Goddard, 2,397,658, April 2, 1956.

Griffith (British), 578,311, June 24, 1946.

Appellant's invention relates to a method and apparatus for controlling the speed of an aircraft driven by one or more jet engines and preventing it from veering off its course because of unequal thrusts from the several engines. [***3] The engines are provided with individual manually adjustable control devices of identical construction, which are connected to respond to the reaction thrusts of the respective engines to vary correspondingly the fuel flow or, alternatively, the cross-sectional area of the air intake or exhaust gas discharge of the engines. The several control devices are connected with each other by a single fluid pressure line, so that all the engines may be controlled in accordance with the performance of one of them, employed as a master engine. Each control mechanism includes a bellows for compensating for changes in density of the atmosphere, [**398] which is normally a function of the altitude of the plane, and also includes means for preventing the engine speed or temperature from exceeding safe limits. Since the appealed claims are broadly drawn, we deem it unnecessary to consider the specific mechanisms by which the results above described are accomplished.

The Goddard patent relates to a jet engine primarily designed for the propulsion of rockets or rocket craft. It discloses a combustion chamber supported on the frame of the craft by springs in such a manner that the springs are [***4] compressed by an amount dependent upon the total jet thrust of the engine. The resultant movement of the combustion chamber causes a corresponding movement of one sleeve of a sleeve valve which controls the supply of fuel to the combustion chamber. The other sleeve of the valve may be adjusted manually as desired

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and a manually actuated valve for completely cutting off the fuel supply is also provided.

The British patent to Griffith discloses a control system for a multi-engine jet aircraft in which each engine is provided with a tube [*914] facing upstream in the path of the exhaust gases and transmitting the pressure resulting from the impact of the gases to one side of a diaphragm in a pressure differential device. The opposite side of the diaphragms associated with the several engines are subjected to a common fluid pressure controlled by a valve in a by-pass around a fluid pump. The diaphragm of each engine regulates the fuel supply of that engine so that changes in the engine exhaust pressure will cause an appropriate adjustment in the fuel supply to balance the thrust to that of the other engine or engines.

In another embodiment shown by Griffith, four engines [***5] are employed, one of which is manually controlled, and the pressure from the exhaust of that engine is transmitted to one said of each of three diaphragms, the other sides of the diaphragms being each subjected to the exhaust pressure of one of the other engines. The movements of the diaphragms control the fuel supplies of the engines with which they are associated to bring them into balance with the manually controlled master engine.

There are fifth claims involved in this appeal and all of them have been rejected on the ground of multiplicity. Both the examiner and the board considered the number of claims presented to be greatly in excess of that necessary to point out and protect appellant's invention, and the examiner was of the opinion that twenty claims would be adequate for that purpose.

Appellant argues that fifth claims are necessary because "The invention herein disclosed is pioneer in scope, there being no reference cited which even broadly anticipates applicant's basic inventive concept of controlling the speed of flight of a jet engined aircraft by means of the jet reaction thrust of the engine"; and because "the invention herein disclosed is a very complex one, [***6] involving the combination of a large number of novel elements."

Assuming appellant's invention to be of a pioneer nature, it is not clear why fifty claims should be necessary to define such an invention which is succinctly described in a single sentence, as quoted above. It may be noted that eight claims were considered sufficient for the basic patent covering both the electromagnetic telegraph and the Morse code. *O'Reilly et al v Morse et al*, 56 U.S. 61

Appellant's invention is not of an exceptionally complex nature. The application includes three sheets of

drawings and the specification covers less than nineteen pages of the printed record here. Applications of substantially greater complexity are frequently before this court and are adequately defined in a number of claims much less than the number presented here. Moreover, as pointed out by the board, the appealed claims do not specify the various detailed features, but are broadly drawn. Accordingly, the alleged [*915] complexity of the specific apparatus disclosed affords no basis for an excessive number of claims.

[1] [***399] As was pointed out in *In re Burnett*, 33 C.C.P.A. (Patents) 1119, 155 F.2d [***7] 540, 69 USPQ 609, it is proper to allow applicants a reasonable latitude in setting forth their inventive concepts in different phraseology, but it is the purpose of claims to point out and define what an applicant regards as his invention, and that purpose is not served if, as the result of frequent repetitions, they present to the mind a blur rather than a definition. *Ex parte Duncan*, 1920 C.D. 36, 276 O.G. 207, affirmed 49 App.D.C. 372, 265 Fed 1012.

Appellant seeks to justify his presentation of 50 claims by dividing them into 10 categories, as follows:

- (a) Broad apparatus claims involving a single engine;
- (b) broad apparatus claims involving a plurality of engines;
- (c) narrow apparatus claims involving a single engine;
- (d) narrow apparatus claims involving a plurality of engines;
- (e) broad method claims involving a single engine;
- (f) broad method claims involving a plurality of engines;
- (g) narrow method claims involving a single engine;
- (h) narrow method claims involving a plurality of engines;
- (i) broad apparatus claims involving a subcombination of elements of applicant's invention; and
- (k) narrow apparatus claims involving a subcombination of elements [***8] of applicant's invention.

[2] Such an arbitrary division does not establish that there are material differences between the claims. Whether a claim is broad or narrow is a matter of degree and opinion, and it does not follow that two claims are patentably, or even materially, different from each other merely because one may be termed "broad" and the other "narrow." Similarly, two claims do not necessarily differ

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materially because one merely recites only one engine while the other recites several; and the fact that one of two claims is drawn to a method, and the other to an apparatus is not, in itself, proof that both are necessary to protect appellant's invention.

[3] The examiner and the board have pointed out what they consider typical examples of claims which do not differ materially from each other. We agree with them as to those examples and are of the opinion that there are a number of other instances of substantial duplication. No two claims are identical and therefore it is possible to argue, in each instance, that the difference might become important under some hypothetical future circumstances. The extent to which virtual duplication of claims may be justified [***9] by possible remote contingencies is a matter of opinion which must be determined on the basis of the circumstances [*916] of each individual case. It is necessary to balance the possible damage to an applicant which might result from an insufficient number of claims against the burden imposed upon the Patent Office and the courts by the presentation of an unreasonably large number. In the instant case we are in agreement with the examiner and the board that the number of claims presented is greatly in excess of what is necessary, with the result that the claims as now presented do not particularly point out and distinctly claim the subject matter which the applicant regards as his "invention," as required by 35 U.S.C. 112. Accordingly, the rejection on the ground of multiplicity will be affirmed.

The examiner also respectively considered 21 claims selected by appellant, and held that seven of them; namely, claims 24 through 27, 29, 37, and 38 would be allowable aside from their rejection on the ground of multiplicity. Four of the other selected claims, Nos. 4, 5, 13, and 14 were held to be drawn to a non-elected species and therefore would not be allowable in the absence [***10] of an allowable generic claim. The remainder of the claims selected, Nos. 2, 3, 6, 11, 12, 16, 17, 19, 21, and 153, were held to be [**400] unpatentable over the references above cited.

Claims 2, 3, and 21 were held by the examiner and the board to be so broad as to be anticipated by the Goddard patent. So far as that holding is concerned, those claims are substantially identical and it will be sufficient to consider only claim 2 specifically.

Goddard shows a combustion chamber producing a propelling jet for his aircraft or rocket, which satisfies the broad requirement of claim 2 for a jet engine, and he also discloses the mounting of the combustion chamber in such a manner that it is movable relative to the aircraft in proportion to the jet thrust, throughout its range of movement. Accordingly, if claim 2 distinguishes

patentably over Goddard, it must be because of the recitation, in its final lines, of "means responsive to said movement for regulating the propulsive power of said engine, in accordance with said movement, so that said aircraft is propelled at a definite, selected speed, corresponding to the position of said engine relative to said aircraft, throughout [***11] the speed range of said aircraft." [Emphasis added.]

The examiner held that the words beginning with "so that" in the quoted expression were merely a functional expression equivalent to the "whereby" clause considered in *In re Lamb*, 32 C.C.P.A. (Patents) 799, 146 F.2d 277, 64 USPQ 241, and hence could not have patentable significance. The board found it unnecessary to consider the correctness of that holding.

[4] We are of the opinion that the expression beginning with "so that" is not merely functional, but constitutes a part of the definition [*917] of the "means responsive to said movement." Thus that means is defined as being responsive to the movement of the engine in such a way that the aircraft will be propelled at a definite speed in the manner specified. Such a definition conforms to the provision of 35 U.S.C. 112 that an element in a claim for a combination "may be expressed as a means or step for performing a specified function without the recital of structure, material or acts in support thereof." The instant situation differs from that presented in *In re Lamb*. There the "whereby" clause did not constitute a part of the definition of any means but merely [***12] stated a function which did not necessarily follow from the apparatus recited in the claim.

It follows from the foregoing observations that claims 2, 3, and 21 are not anticipated by the Goddard patent, unless that patent shows a control means which will cause the aircraft to be "propelled at a definite, selected speed." It has not been contended that Goddard expressly discloses such speed control, but it was the opinion of the board that it is inherent in the system disclosed by the patent.

The arrangement shown by Goddard is such that the movement of the combustion chamber in response to an increased thrust causes the fuel supply to be increased. So long as enough oxygen is supplied to the chamber to combine with all the fuel supplied, such an increase in the amount of fuel will increase the thrust, resulting in a further movement of the combustion chamber and an additional increase in the fuel supply. However, when the amount of fuel exceeds that which can properly combine with the oxygen, the thrust will be decreased so that the combustion chamber will move back, under the action of the springs by which it is supported, thus restricting the supply of fuel. The result of [***13] this

45 C.C.P.A. 911, *; 254 F.2d 396, **;
1958 CCPA LEXIS 188, ***, 117 U.S.P.Q. (BNA) 361

arrangement, as described by Goddard, is that fuel will always be supplied in such an amount as "to produce the greatest thrust for the oxygen flow that is taking place "

Goddard's oxygen supply is controlled by a hand valve, but it is pointed out in the patent that the oxygen flow depends not only on the setting of the valve but also upon the temperature of the combustion chamber, and it is also evident that in the case of a rocket, the flow would vary as the supply of oxygen approached exhaustion. When such variations take place, the control means described does not adjust to maintain a uniform thrust or speed but, on the contrary, brings the [**401] fuel supply into proper relation with the changed supply of oxygen to the combustion chamber, thus producing a variation in thrust and speed.

In our opinion the Goddard arrangement does not satisfy the requirement of claims 2, 3, and 21 as to speed regulation. It is true, that so long as Goddard's oxygen flow remains constant, the fuel [**918] supply will also be kept constant, resulting in uniform speed. However, upon any change in the rate of oxygen flow, there will be a corresponding change in thrust and speed. [***14] Accordingly, Goddard's fuel control means serves merely to coordinate the fuel and oxygen supplies to obtain optimum combustion conditions and is not, in any proper sense, a means for maintaining any definite selected speed. On the contrary, it acts to produce a different speed whenever there is a variation in the rate of flow of oxygen.

It follows that claims 2, 3, and 21 are not anticipated by the Goddard patent. Since it has not been contended that, if not so anticipated, they do not define invention over the patent, it must be held, so far as the issues presented here are concerned, that those claims are drawn to patentable subject matter.

Claim 153 is a method claim of a scope similar to that of claims 2, 3, and 21, and was similarly rejected on the Goddard patent. For the reasons given in connection with claims 2, 3, and 21, we also find claim 153 to be drawn to patentable subject matter.

Claim 6 was held by the examiner to be unpatentable over the patent to Banning, 2,569,444, but that holding was reversed by the board. Accordingly, no question as to the patentability of claim 6 is here presented.

Claims 11, 12, 16, 17, and 19 were rejected as unpatentable over [***15] Griffith, in view of Goddard. Claim 12, which is representative of that group of claims, calls for a multi-jet engine aircraft in which flight speed is controlled in accordance with the jet reaction thrust of each engine, the engines being movably mounted to effect that result, and in which the propulsive power of

all the engines is regulated by varying the fuel supply to a master engine, so that the aircraft is propelled at a definite selected speed.

It was the opinion of the board that Goddard controls the speed of flight of his aircraft by the jet thrust of his engine, that Griffith controls his multi-jet engine plane in such a way as to obtain a definite selected speed, although he utilizes exhaust flow rather than total jet thrust for that purpose, and that there would be no invention in combining those two disclosures to produce what is recited in claims 11, 12, 16, 17, and 19.

As has been noted in connection with claims 2, 3, and 21, we are of the opinion that Goddard does not control the speed of his aircraft by the jet thrust of his engine. That thrust acts merely to coordinate the oxygen and fuel supplies and to make the speed dependent upon the rate of supply of [***16] oxygen. Moreover, it is by no means apparent how the Goddard and Griffith disclosures could be combined to produce a unitary device functioning in the manner called for by claim [**919] 12. Griffith effects his multi-engine control by creating a pressure which is a function of the exhaust flow of each engine and balancing the pressure of the master engine against the individual pressures of the other engines. Goddard does not show such a pressure system and there is nothing to show how the movement of each of a number of engines constructed in accordance with his disclosure could be converted into a fluid pressure so that such pressures could be balanced in the manner suggested by Griffith.

In our opinion, the references do not suggest either the desirability of the result called for by claim 12 or the manner in which it could be attained. It follows that that claim defines patentably over the references.

Claims 11, 16, 17, and 19 are quite similar to claim 12 and, for the reasons just given, we consider that those claims also define patentable subject matter.

[5] [**402] Claims 4, 5, 13, and 14 were held to be drawn to nonelected species. They were not considered [***17] on their merits by the examiner or the board and, accordingly, are not before us for such consideration. *In re Hill et al.*, 34 C.C.P.A. (Patents) 783, 158 F.2d 1001, 72 USPQ 263. Appellant alleges error in the failure of the board to pass upon the merits of those claims. He does not deny that they are directed to nonelected species, but contends that the application contains allowable generic claims and that therefore he is entitled to an action on the merits of claims 4, 5, 13, and 14, under the provisions of Patent Office Rule 146. However, since all the claims stand rejected on the ground of multiplicity, the application now contains no allowed claim, generic or otherwise. If the multiplicity objection is overcome, and the case then contains an

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allowable generic claim, action on the merits of claims 4, 5, 13, and 14 will apparently be in order.

[6] Appellant also contends that, notwithstanding the rejection on the ground of multiplicity, the board should have passed on the merits of some or all of claims 7 to 10, 15, 18, 22, 23, 28, 30 to 36, and 39 to 50. The board properly refused to consider those claims on the merits since the examiner had made no final rejection of [***18] them except on the ground of multiplicity.

[7] The question as to how many claims should be considered on their merits when there is an outstanding rejection of all the claims on the ground of multiplicity is one which should be left largely to the discretion of the Patent Office tribunals. There appears to be no statute or rule which requires any action whatever on the merits

under such circumstances. In the instant case, we are of the opinion that, with the exception of claims 4, 5, 13, and 14, [*920] to the extent noted above, appellant's application has received ample consideration on the merits and such consideration of additional claims is not in order.

The decision of the Board of Appeals is affirmed as to (1) the rejection of all the claims on the ground of multiplicity; and (2) as to the failure to consider claims 4, 5, 7 to 10, 13, 14, 15, 18, 20, 22, 23, 28, 30 to 36, and 39 to 50 on their merits; and (3) is reversed as to the holding that claims 2, 3, 11, 12, 16, 17, 19, 21, and 153 are not drawn to patentable subject matter.

JACKSON, J., Retired, recalled to participate.
[***19]

LEXSEE

IN RE JOHN A. OELRICH ET AL.

Appeal No. 81-564.

UNITED STATES COURT OF CUSTOMS AND PATENT APPEALS

666 F.2d 578; 1981 CCPA LEXIS 153; 212 U.S.P.Q. (BNA) 323

Oral argument on October 9, 1981

December 10, 1981

PRIOR HISTORY: [*1] Serial No. 452,050.

CASE SUMMARY:

PROCEDURAL POSTURE: Appellant sought review of the decision of the United States Patent and Trademark Office Board of Appeals sustaining the patent examiner's rejection under 35 U.S.C. § 102 of a claim in appellant's application for an apparatus specially adapted for moving low inertia steering fins on guided missiles.

OVERVIEW: Appellant's claim for an apparatus specially adapted for moving low inertia steering fins on guided missiles was rejected by the patent examiner. The United States Patent and Trademark Office Board of Appeals affirmed the rejection concluding that under 35 U.S.C. § 102, the claim was anticipated by a patent previously issued to appellant. Appellant sought review, and the appellate court reversed. The appellate court concluded that the determinative issue was a question of inherency. The board contended that the apparatus of the previously issued patent inherently performed the function of the apparatus of the rejected claim. The appellate court stated the principle that mere recitation of a newly discovered function or property, inherently possessed by things in the prior art, does not distinguish a claim drawn to those things from the prior art. However, the court determined that in this case the rejected claim did not merely recite a newly discovered function of the old device. The appellate court concluded that there was no inherency, because the rejected claim contained a limitation that was not inherently present in the device of the previously issued patent.

OUTCOME: The rejection of appellant's claim was reversed, because the claim did not merely recite a newly discovered function of the device in a previously issued patent and contained a limitation that was not inherently present in the device in the previously issued patent.

CORE CONCEPTS:

Civil Procedure > Preclusion & Effect of Judgments > Res Judicata

Civil Procedure > Preclusion & Effect of Judgments > Collateral Estoppel

Patent Law > Collateral Estoppel

Res judicata does not have its usual impact when considering ex parte patent appeals; the public interest in granting valid patents outweighs the public interest underlying collateral estoppel and res judicata, particularly where the issue presented is not substantially identical to that previously decided.

Patent Law > Novelty & Anticipation

It is true that mere recitation of a newly discovered function or property, inherently possessed by things in the prior art, does not distinguish a claim drawn to those things from the prior art.

Patent Law > Novelty & Anticipation

Inherency may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. If, however, the disclosure is sufficient to show that the natural result flowing from the operation as taught would result in the performance of the questioned function, it

666 F.2d 578, *, 1981 CCPA LEXIS 153, **,
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seems to be well settled that the disclosure should be regarded as sufficient.

COUNSEL: Roger A. VanKirk, attorney for appellant.

Joseph F. Nakamura, Solicitor, and Thomas E. Lynch, Associate Solicitor, for the Patent and Trademark Office.

OPINIONBY: RICH

OPINION: [*579] Before MARKEY, Chief Judge, RICH, BALDWIN, MILLER, and NIES, Associate Judges.

RICH, Judge.

This appeal is from the decision of the United States Patent and Trademark Office (PTO) Board of Appeals (board) sustaining the examiner's rejection of claim 1 in application serial No. 452,050, filed March 18, 1974, entitled "Sub-Critical Time Modulated Control Mechanism," under 35 USC 102 as anticipated by appellant Oelrich's U.S. patent No. 3,430,536 for "Time Modulated Pneumatically Actuated Control Mechanism," issued March 4, 1969. We reverse.

Background

This application was the subject of *In re Oelrich*, 579 F.2d 86, 198 USPQ 210 (CCPA 1978), in which a rejection of claims 1-5 under 35 USC 103 was reversed. Appellant's method claims 2-5 now stand allowed.

The invention of claim 1 is directed to an apparatus specially adapted for moving low inertia steering fins on guided missiles. The prior art apparatus and the theory upon which it operates are fully [**2] discussed in our above prior opinion and will, therefore, not be repeated here. Generally, the claimed device responds to an electric signal from a missile guidance system, the magnitude of which is proportional to the desired amount of course-correcting fin movement, and converts the signal into a pneumatic pressure of appropriate magnitude which acts on a piston to move the missile guiding fin. The device which is the subject of the Oelrich patent "was employed only with the then available steering fins which they characterize as 'high inertia' loads." n1 The frequency at which this "high inertia" load system is operated is stated to be above the critical (resonant) frequency of the system 579 F.2d at 87-89, 198 USPQ at 212-13. The allowed method claims and apparatus claim 1 direct use of a carrier frequency below the critical frequency of the system.

n1 While the solicitor equates "low-inertia" with a "relatively light load" and "high-inertia" with a "relatively heavy load," appellants are not

as unequivocal. They refer to "small inertia" and "low inertia" loads, but, for example, the Divigard affidavit refers to "Fin Inertia" in terms of "in-1b sec²/rad," a unit of measure applicable only in referencing moment of inertia, not inertia. The difference is significant because inertia, measured in terms of mass, is closely related to weight, while moment of inertia is affected by the distribution of the mass. Because of this ambiguity, we cannot and do not use the terms "weight" and "inertia" interchangeably [**3]

Claim 1 reads (emphasis ours):

1. A time modulated fluid actuated control apparatus comprising:

housing means, said housing means defining a cylinder;

actuator piston means disposed in said housing means cylinder, said piston means including an output member adapted to be connected to a movable load, said load and control apparatus defining a system having a range of resonant frequencies;

solenoid operated valve means mounted on said housing means, said valve means being selectively operable to deliver pressurized fluid to and to vent fluid from said housing means cylinder at one side of said piston means;

means of generating variable input command signals commensurate with the desired position of the load, said command signals being characterized by a dynamic frequency range below said range of said resonant frequencies;

means for generating a signal at a carrier frequency, said carrier frequency being greater than the maximum dynamic command signal frequency and less than the minimum system resonant frequency; [*580]

means for modulating said carrier frequency signal by said command signals; and

means responsive to said modulated carrier frequency signal for [**4] controlling energization of said solenoid operated valve means.

In sustaining the examiner's rejection under § 102, the board expressed agreement with his reasoning, which is here summarized. Stating that "the issue is identical to that decided in *In re Ludike*, 58 CCPA 1159, 441 F.2d 660, 169 USPQ 563 (1971)," the examiner noted that, for purposes of determining inherency, "the question is, does Oelrich [the reference patent] disclose a signal generator that necessarily must supply the carrier frequencies that appellants use?" The examiner turned to Exhibit A of

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coapplicant Divigard's affidavit, which states as an assumption in a "Linearized Simulation" of a "high inertia" load system that the critical resonance frequency must be kept below 80 Hz to avoid interaction with the carrier frequency which is between 100 and 150 Hz. Thus, the examiner concluded, "Exhibit A establishes Oelrich's carrier frequency range, which may now be compared with the carrier frequency range of applicants' low-inertia system." It was then asserted that the Oelrich and Kolk affidavits establish that good low inertia system design practice dictates a carrier frequency range of 95-190 Hz. Since the [***5] carrier frequency range for the high inertia system lies within the range for the low inertia system, and since the critical frequency of the low inertia system is near the solenoid limit of 175 Hz, the examiner posited that the Oelrich carrier frequencies would be sub-critical in the low inertia system, saying, "Thus Oelrich's signal generator does in fact inherently produce frequencies which would be sub-critical when used with a low-inertia system, and therefore, inherently supplies a carrier frequency range which is usable in applicants' system since this conclusion was deduced from specific data presented in the patent and in the affidavits supplied by appellants." The appellants also asserted our prior decision was res judicata.

OPINION

Although appellants' arguments on appeal are directed primarily to a discussion of res judicata n2 and whether a "product which is unwittingly produced is anticipation," resolution of this case is properly had by comparison of the reference patent to the limitations of claim 1. As will appear, the determinative issue is a question of inherency.

n2 The doctrine of res judicata, argued in view of our decision in *In re Oelrich*, 579 F.2d 86, 198 USPQ 210 (CCPA 1978), is not applicable to the instant rejection. The issue in the former case was obviousness; here it is anticipation. A new rejection is before us. Furthermore, res judicata does not have its usual impact when considering ex parte patent appeals; the public interest in granting valid patents outweighs the public interest underlying collateral estoppel and res judicata, particularly where the issue presented is not substantially identical to that previously decided. *In re Russell*, 58 CCPA 1081, 1083, 439 F.2d 1228, 1230, 169 USPQ 426, 428 (1971); *In re Craig*, 56 CCPA 1438, 1441-42, 411 F.2d 1333, 1335-36, 162 USPQ 157, 159 (1969) [**6]

The distinguishing feature of claim 1 is defined in the paragraph which states that the apparatus contains a

means for generating a * * * carrier frequency * * * greater than the maximum dynamic command signal frequency and less than the minimum system resonant frequency. n3

n3 Emphasis is ours. Portions of the claim unnecessary to this discussion have been omitted for clarity.

Given that the carrier frequency which can be used in a low inertia system may fall within the range of carrier frequencies usable in a high inertia system (appellants admit as much), the PTO urges that the apparatus of the Oelrich patent inherently performs the function of the apparatus of claim 1, and that finding a new use for an old device does not entitle one to an apparatus claim for that device, citing *In re Wiseman*, 596 F.2d 1019, 201 USPQ 658 (CCPA 1979). Appellants in that case argued, however, that a structure suggested [**581] by the prior art was patentable to them because it also possessed an inherent but unknown function which they claimed to have discovered. This court stated that a "patent on such a structure would remove from the public that which is in the public domain by [**7] virtue of its inclusion in, or obviousness from, the prior art." *Id.* at 1023, 201 USPQ at 661

Appellants here countered the PTO inherency contention at oral argument (no reply brief was filed) by urging that there is no "inherency" because there is no "inevitability," that is, the previously quoted "means plus function" limitation of claim 1 is not inherently (always) present in the device of the Oelrich patent.

It is true that mere recitation of a newly discovered function or property, inherently possessed by things in the prior art, does not distinguish a claim drawn to those things from the prior art. *In re Swinehart*, 58 CCPA 1027, 1031, 439 F.2d 210, 212-13, 169 USPQ 226, 229 (1971). In this case, however, claim 1 does not merely recite a newly discovered function of an old device. *In re Chandler*, 45 CCPA 911, 254 F.2d 396, 117 USPQ 361 (1958), a case not cited by either party to this appeal, is most pertinent to the instant controversy.

The claim in *Chandler*, *id.* at 912-13, 254 F.2d at 397, 117 USPQ at 361-62, drawn to an automatic control for a jet engine, included a "means responsive to said movement for regulating the propulsive power of said engine, in accordance [**8] with said movement, so that said aircraft is propelled at a definite, selected speed, corresponding to the position of said engine relative to said aircraft, throughout the speed range of said aircraft." (Emphasis added.) In refuting the examiner's argument that the words beginning with "so that" were merely functional, and thus did not distinguish the device from that claimed in a patent to Goddard, this court stated:

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* * * the expression beginning with "so that" is not merely functional, but constitutes a part of the definition of the "means responsive to said movement." Thus that means is defined as being responsive to the movement of the engine in such a way that the aircraft will be propelled at a definite speed in the manner specified. Such a definition conforms to the provision of 35 U.S.C. 112 that an element in a claim for a combination "may be expressed as a means or step for performing a specified function without the recital of structure, material or acts in support thereof. n4

n4 For a similar case, see *In re Wilson*, 53 CCPA 1141, 1148-49, 359 F.2d 456, 461, 149 USPQ 523, 527 (1966). The provision of § 112 referred to is, of course, the sixth paragraph, formerly, at the times of Chandler and Wilson, the third paragraph. The change occurred January 24, 1978. [**9]

Likewise, the words after "means for generating a * * * carrier frequency" in the claim on appeal constitute a limiting definition of the means. The PTO does not contend that this limitation, a carrier frequency which is "less than the minimum system resonant frequency," is expressly disclosed in the Oelrich patent. Neither, however, is this limitation inherent therein. In

Hansgig v. Kemner, 26 CCPA 937, 940, 102 F.2d 212, 214, 40 USPQ 665, 667 (1939), the court said:

Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. [Citations omitted] If, however, the disclosure is sufficient to show that the natural result flowing from the operation as taught would result in the performance of the questioned function, it seems to be well settled that the disclosure should be regarded as sufficient.

The relationship between the carrier frequency and the system critical frequency — the former below the latter (and expressly made a claim limitation by use of "means plus function" language) — cannot be said to be "the natural result flowing from the operation [**10] as taught." The Oelrich patent instructs that the device is "adapted to receive a carrier frequency substantially in [**582] excess of the particular system critical or resonant frequency * * *." Given this express teaching, a "means for generating a * * * carrier frequency * * * less than the minimum system resonant frequency" is not inevitably present.

The decision of the board is reversed.

REVERSED